Product Brief

MSC8102ADSPB/D
Rev. 0, 11/2003

MSC8102 Application Development System (MSC8102ADS)

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OVERVIEW

The MSC8102ADS board is for the Motorola MSC8102 processor, a highly integrated system-on-a-chip device containing four StarCore SC140 DSP cores. The MSC8102 System Interface Unit (SIU) is similar to that of the MSC8101. The MSC8102ADS board serves as a platform for software and hardware development in the MSC8102 processor environment. On-board resources and the associated debugger enable developers to perform a variety of tasks, such as downloading and running code, setting breakpoints, displaying memory and registers, and connecting proprietary hardware via the expansion connectors. The MSC8102 processor enables these these features to be incorporated into selected systems.

This board works seamlessly with the CodeWarrior Development Studio for StarCore.

BENEFITS

Hardware and software designers can use this board as a reference design and start immediately on their 8102 projects, long in advance of having any custom hardware.

SYSTEM REQUIREMENTS

- 0–30 degrees C (room temperature).
- Dimensions: 233.35 mm × 160.0 mm × 1.8 mm.
- 9–18V external DC power supply. For 12V max current 1.2A.

This board can be ordered with the following part number: MSC8102ADS, which specifies the ADS board packaged with manuals and power supplies.

FEATURES

- The ADS is based on the 64-bit MSC8102. Both the system bus and the Direct Slave Interface (DSI) run up to 100 MHz.
- MSC8102 interface:
  - DSI bus is a slave of the MSC8101 with its 60x-compatible bus.
  - DSI can be configured to 32-bit when the system bus is sized at 64-bit (default mode) or *vise versa* (DSI 64-bit/system bus 32-bit).
  - Memory controller Synchronous Dynamic RAM (SDRAM) machine controls either 8 or 16 MB of SDRAM memory size on the system bus. Memory size depends upon the system bus configuration.
  - 4MB at 8-bit size Flash for configuration/boot/program storage.
  - Four MSC8102 TDM ports connect to the Infineon TSI PEF24471 device.
  - Interconnection of T1/E1 timeslots between the Infineon FALC PEB2256 and the Dual CODEC MT92303.
  - TDM bus on the J4 Compact PCI connector is also available.
  - RS-232 Transceiver MAX3241 supports the UART port operation of the MSC8102.
- Board capabilities:
  - Programmable Hard Reset Configuration for MSC8102 is executed from the Flash memory or the DSI bus. This configuration type may also be forced from the BCSR.
  - Boot for the MSC8102 is available from the system bus (Flash). The MSC8102 device can also be booted from the UART or TDM ports.
  - High density (MICTOR) Logic Analyzer connectors to facilitate MSC8102 signal measurement.

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- As expansion connectors, CompactPCIÆ connectors carry MSC8102 signals to off-board tools to enable chip verification and evaluation.
- Debugging is performed via an external command converter connected to the OnCE 14-pin headers.
- OnCE debug chain allows, via backplane, the connection of additional ADS boards.
- After reset the Debug Enable/Disable and Debug Request options can be selected.
- Board identification and board status can be read via the BCSR.
- An SMB form RF-connector enables an external pulse generator to be connected to the clock input of the MSC8102.
- Variant board configurations are available via the Dual-In-Line Package (DIP) Switch setting.
- Board features push buttons for both the host and slave: power-on reset, soft reset, hard reset, and abort.
- Board is powered by a single 9–18V external DC supply with on-board reverse polarity protection.
- Voltage is provided to the board DC-DC converter, which has the following parameters: 3.3V @ 4A 10 percent.
- DC-DC converter powers two voltage regulators: 1.3–1.7V adjustable linear voltage regulator for the MSC8102.
- Software Option Switch provides 8 software options via the BCSR.
- LEDs indicate power supply, peripheral enables, EE1 pin status, and software signals.

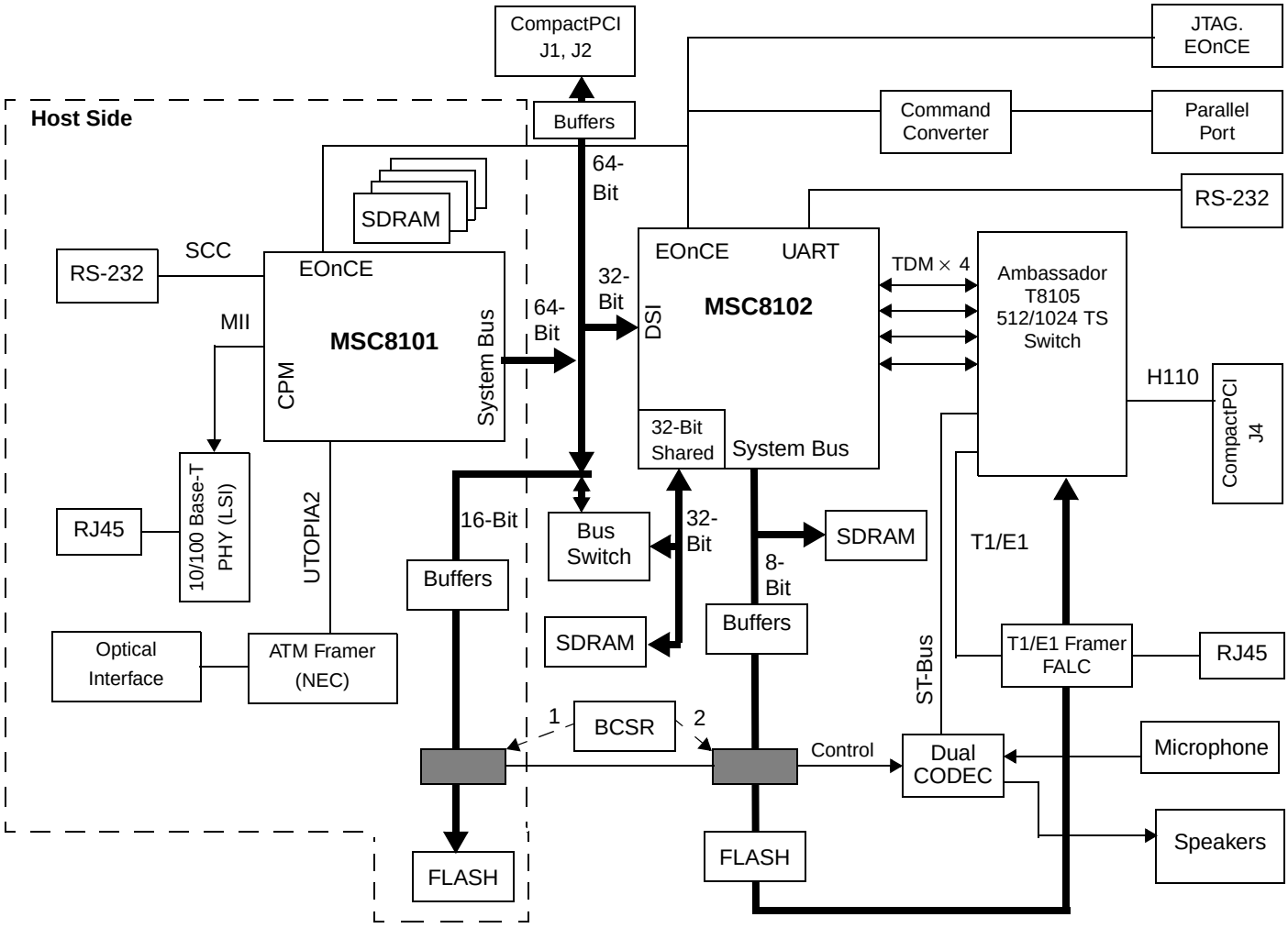

Figure 1. MSC8102ADS Board With MSC8101 Host

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NOTES:

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Motorola Literature Distribution
P.O. Box 5405
Denver, Colorado 80217
1-800-521-6274 or 480-768-2130

JAPAN:

Motorola Japan Ltd.
SPS, Technical Information Center
3-20-1, Minami-Azabu Minato-ku
Tokyo 106-8573 Japan
81-3-3440-3569

ASIA/PACIFIC:

Motorola Semiconductors H.K. Ltd.
Silicon Harbour Centre
2 Dai King Street
Tai Po Industrial Estate,
Tai Po, N.T., Hong Kong
852-26668334

HOME PAGE:
http://motorola.com/semiconductors/

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